Enterprise Centralized Hosted Exchange

Service Offering

Certified Public Manager (CPM) Project

Enterprise Centralized Hosted Exchange Service Offering and Rate Evaluation

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South Carolina Budget and Control Board

Division of the State CIO

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Background

South Carolina Budget and Control Board

The South Carolina Budget and Control Board is the central administrative agency for South Carolina State Government. Its essential role is to improve efficiency and serve the agencies that serve the citizens of South Carolina. The Boards mission statement is: "We Make Government Better."

Division of the State Chief Information Officer

The Division of the State Chief Information Officer (CIO) is a major operating division of the South Carolina Budget and Control Board. The CIO sets the direction for the State's use of technology and supports the provision, use and administration of information technology (IT) in government. The CIO remains committed to providing the best, most cost effective IT solutions for its customer partners.

Vision, Mission, Goals

Vision - To be the leader in the application of technology to deliver cost effective services for citizens, businesses and government organizations.

Mission - "Connecting People and Information"

> The CIO facilitates the delivery of government services in South Carolina by coordinating enterprise technology investment and providing information technology solutions.

Goals

Promoting Enterprise IT Vision

Assuring Information Protection and Privacy

Providing Best Value Services

Fostering Employee Growth

The CIO provides a variety of IT services to internal and external customers. The services the CIO provides allow its customers to focus on their specific agency missions and goals, without the need to exhaust resources in the IT arena.

Shared Centralized services offered at the CIOs State Data Center allow for standardization, high availability, disaster recovery, and reduction in cost. The full benefits of utilizing the CIO and State Data Center area attached in Appendix 1.

Enterprise Computing Services is a section within the Division of the State CIO. The Enterprise Centralized Hosted Exchange is one of the services Enterprise Computing Services offers to internal and external customers and it aligns with all of the CIO goals listed above and the CIOs mission of "Connecting People and Information" while promoting the Budget and Control Boards mission of "We Make Government Better".

The Enterprise Centralized Hosted Exchange service is a Hosted Exchange model, which offers customers Microsoft Exchange messaging and collaboration services via Outlook client or web access. The full details of the service are available in Appendix 2.

Problem Statement:

The Division of the State CIO is a revenue based agency. We receive no funding from the Legislature to provide for day to day operations. As a cost recovery agency, our rates must provide for full recovery of all our costs. The Division of the State CIO must provide high quality service, and customer satisfaction while insuring our charges are reasonable. This Enterprise Centralized Hosted Exchange Service Offering Project will help us to determine if we currently have appropriate staffing and appropriate systems which are strategic to both the cost of the service (rates) and customer satisfaction. If staffing is not adequate, our customer satisfaction will suffer. If systems are inappropriate, our service will suffer and with that our customer satisfaction will suffer. We must develop appropriate metrics to measure all of these facets and then extend them to our other services. By validating systems and staffing estimates, we will validate rates for the service.

The two largest costs factors when developing rates for a service are the personnel costs and the systems costs. The personnel costs are the true cost of the personnel required to install, maintain, monitor and improve service offerings. True costs include things like salary, benefits, rent, telephone service(s), computers, etc. The systems costs are the cost of the hardware, software, licenses, backup and recovery of all systems related to a service offering. The systems costs are generally available and somewhat obvious in the initial stages of planning a service. If you can host 1500 accounts on a single Exchange server and you will have 4500 accounts, then it will require 3 servers to provide for this number of accounts. The personnel costs are not quite as obvious and decisions must be made based on industry standards. If a single Exchange Administrator can normally support 2500 accounts, then an installed base of 7500 accounts will require 3 administrators to support the system. With diverse numbers from different major

service organizations, coming up with the appropriate amount of personnel to support an application prior to deployment is difficult. If you have too many Exchange administrators, the rate will be too high, and you may not be able to sell the service. If you do not include enough Exchange administrators, the service will suffer and you will lose customers because customer satisfaction will go down.

We will try, through metrics, to determine if we have appropriate staffing and appropriate systems for our Exchange offering and to determine if the rate is appropriate, must be reduced, or if we must increase rates to cover systems or personnel costs not initially planned. If applicable, we will also take these metrics to other services we offer currently and in the future to help us with the same determinations.

The CIOs Exchange service currently hosts over 7000 accounts. The majority (6000) of these accounts have recently started using the service. As you can see from the tables below, even a change as small as a dollar per month would save our customers a substantial amount of money.

Table 1

Customer	Number of Accounts	Monthly service Rate	Customer Monthly Cost	Customer Annual Cost
Large State Agency	4500	$10.00	$45,000.00	$540,000.00
Large County Government	1200	$10.00	$12,000.00	$144,000.00
Medium State Agency	350	$10.00	$3,500.00	$42,000.00
Small State Agency	20	$10.00	$200.00	$2,400.00

Table 2

Customer	Number of Accounts	Monthly service Rate	Customer Monthly Cost	Customer Annual Cost
Large State Agency	4500	$9.00	$40,500.00	$486,000.00
Large County Government	1200	$9.00	$10,800.00	$129,600.00
Medium State Agency	350	$9.00	$3,150.00	$37,800.00
Small State Agency	20	$9.00	$180.00	$2,160.00

Table 3

Customer	Number of Accounts	$10 rate	$9 Rate	Annual Difference
Large State Agency	4500	$540,000.00	$486,000.00	$54,000.00
Large County Government	1200	$144,000.00	$129,600.00	$14,400.00
Medium State Agency	350	$42,000.00	$37,800.00	$4,200.00
Small State Agency	20	$2,400.00	$2,160.00	$240.00

In the largest agency's case, the impact could possibly be enough money to recover costs for an entire project; or in the case of the smallest agency the impact could possibly be enough to purchase supplies for a year. Either way, this is a savings that would be appreciated. There is another consideration however. The loss of almost $73,000 dollars of revenue per year to the Exchange service could be enough to cause the service not to recover its costs, and have to be eliminated.

Data Collection:

We are currently collecting Exchange data from several sources simultaneously. The first source is the system providing the service. This includes actual hardware required from end to end to provide the service. If we are over taxing any portion of the systems hardware capabilities, then additional hardware, which was not planned during initial rate development, may have to be purchased and the rate may have to be increased. If the Exchange server hardware is showing severe under-utilization, then the systems should be able to handle larger numbers of accounts prior to requirements for new hardware, and the rate may need to be decreased.

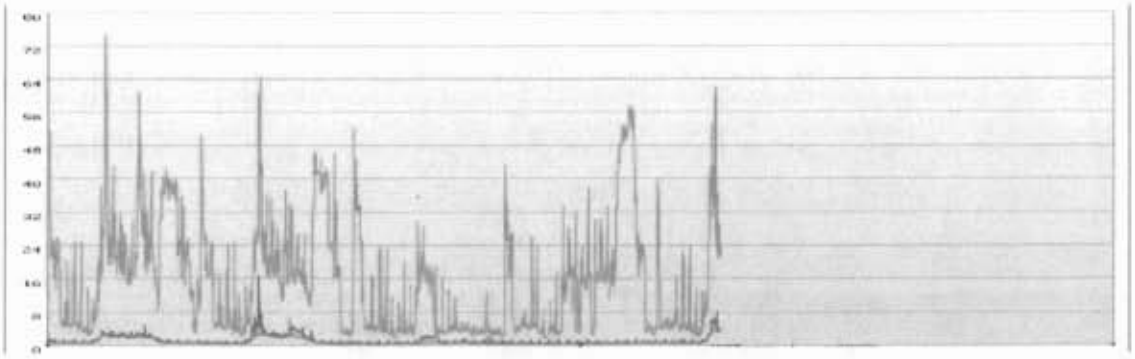
The second source, from which we are collecting data, is the administrators of the system. As stated before this is the largest cost factor in deriving a suitable rate. We are determining if our administrators are over burdened with the number of accounts and users that they are committed

to support. If our administrators spend more than 37.5 hours per week per administrator on a consistent basis, then additional administrators may be needed to maintain the service, and the rate would have to be adjusted to reflect the additional expense.

The data collected will tell us one thing – Did the model we used to create the service rate account correctly for the systems (hardware), and administrators (personnel) required to provide the service? If the answer is no, the data will tell us if we under or over estimated on either of these two factors, and the rate must be adjusted to accommodate the additional costs or reductions in cost. If the answer is yes, the service was modeled correctly and the systems and administrators are at the right number, and the rate is correct for the service.

Data Analysis:

Data analysis began with the systems. The service is made up of many separate pieces of hardware. The backend of the Exchange system are the Exchange Data Stores (Database Servers). These servers are clustered to provide high availability. Clustered servers can fail over if one server experiences a problem to allow continuous access to the service. Examining the data on the Data Stores, the Central Processor Utilization (CPU) was well below 40% with occasional spikes into the 40% range. This is an excellent zone for normal operation. The chart below (CPU Chart) shows 1600 data points for CPU utilization for the clustered back end. Because it is a two processor system data points should be divided by two.



The server's memory utilization also fell into this range. These two factors are the primary measures to determine if hardware is adequate for the task being performed. Based on these two factors, we feel the hardware is adequate. If the numbers were well below the 10% to 15% range we would have over calculated the size of the hardware and if the numbers approach 80% consistently, the hardware would have been under calculated and additional hardware would be required. Another measure of hardware is storage. These two Data Store servers are connected to a Storage Area Network (SAN). The storage factor, then, is irrelevant because storage is assigned as needed and no hard limitations are set by the internal drives.

Data analysis then turned to the front end Outlook Web Access (OWA) servers. These servers are again set in a highly available configuration utilizing Load Balancing. Load balancing allows two or more servers to share the requests coming through to spread the utilization over the entire front end. If the load balanced servers become over burdened, you can add another server to assist with the processing. The OWA front end servers averaged less than 20% utilization. This is an excellent range. If the range were too high (over 40%) one device would have difficulty handling the service when maintenance is performed on the other server.

Data analysis continued on our Antivirus / Anti-Spam devices and Internet Security and Acceleration Servers (ISA). These devices, like the front and back end servers are in a highly available configuration. Again, these devices reported their CPU utilization at excellent levels. Based on these findings, it is a definitive conclusion that the systems are capable of supporting the Exchange Service and that they are appropriately sized. With this conclusion we can also state that the first part of the rate calculation (System) is correct.

The largest factor in setting a rate for Exchange and the next area for data analysis was the personnel costs. We needed to determine if the Exchange administrators were over burdened or underutilized, and approximately how many accounts could be supported by each administrator. The rates for the system were developed with 3,000 accounts per administrator as the factor. If the technician's hours were over 37.5 average working hours, then we may need additional technicians and the rate may have to be adjusted to reflect the additional costs. The administrators of the system logged the number of calls related to the Exchange System, the type of calls, the dates of the calls, and approximately how much time was required to resolve the issues. The Table below (Trouble Calls) lists the calls recorded. The second table (Time to Resolve) lists approximate times to resolve the particular incident.

Table: Trouble Calls

	August	September	October	November	December
Configuration	100	18	3	3	3
Connection	11	3	10	4	0
Domain	2	0	0	0	0
New User	169	118	110	5	0
Other	63	71	33	28	6
Password Reset	119	34	33	4	0
Profile Error	55	10	47	12	7
Termination	0	2	35	4	0
Training	21	5	1	0	0
Userid	10	1	2	0	0
Email	21	3	1	3	0
User via UARS	1	84	156	49	76
	571	265	275	63	16

Table: Time to Resolve

	Estimated time per task (mins)
Configuration	15
Connection	5
Domain	5
New User	10
Other	10
Password Reset	2
Profile Error	5
Termination	10
Training	10
Userid	10
Email	15
User via UARS	5

The number of calls listed in the table above is for 4,500 accounts in the Exchange System. To determine number of technicians and hours we must estimate to 9,000 and even 12,000 accounts. Based on each technician working 37.5 hours per standard work week or 1950 hours per year, we arrived at 1710, the actual available hours an employee can work assuming:

- subtracting 90 holiday hours for our standard (12) holidays
- subtracting 112.5 hours for use of all earned (15 days) annual leave
- subtracting 37.5 sick leave (5 days) hours

Out of these 1710 hours approximately 20% would be spent in meetings or other non service related duties. That leaves 1368 hours per year per technician to apply to the service or 114 hours per month. Approximately 50% or 57 hours of the technician's time will be spent on the service infrastructure or systems (servers, operating systems, software, antivirus, patches, updates etc.) and the other 50% or 57 hours will be spent resolving these trouble calls. The tables below show the amount of time required to resolve the trouble calls that were tracked for August thru December. Again these numbers are based on 4,500 accounts.

Task Minutes

	Aug	Sep	Oct	Nov	Dec
Configuration	1500	270	45	45	45
Connection	55	15	50	20	0
Domain	10	0	0	0	0
New User	1690	1180	1100	50	0
Other	630	710	330	280	60
Password Reset	238	68	66	8	0
Profile Error	275	50	235	60	35
Termination	0	20	350	40	0
Training	210	50	10	0	0
Userid	100	10	20	0	0
Email	315	45	15	45	0
User via UARS	5	420	780	245	380
Totals	5028	2838	3001	793	520

Task Hours

	Aug	Sept	Oct	Nov	Dec
Configuration	25	5	1	1	1
Connection	1	0	1	0	0
Domain	0	0	0	0	0
New User	28	20	18	1	0
Other	11	12	6	5	1
Password Reset	4	1	1	0	0
Profile Error	5	1	4	1	1
Termination	0	0	6	1	0
Training	4	1	0	0	0
Userid	2	0	0	0	0
Email	5	1	0	1	0
User via UARS	0	7	13	4	6
Totals	85	48	50	14	9

If we look at available hours for 4,500 accounts and extrapolate the hours to 9,000, 12,000, or 13,500 accounts we can see when our technicians will run out of usable hours to accommodate the tasks or trouble calls. The table below (Available Hours) shows the extrapolation and graphically represents the availability of hours. The darker red demonstrates less available hours and darker green demonstrates more available hours. To the right of the table are the total of the available hours for 5 months and the average hours available per month for the two technicians that are assigned to this service.

Available Hours (After Trouble Calls are Done)

	Aug	Sep	Oct	Nov	Dec	Total available hours for 5 months	Average available hours per month
Available Hours 4500 accounts	29	66	64	100	105	364	72.8
Extrapolation to 6000 accounts	1	50	47	95	102	295	59
Extrapolation to 7500 accounts	-28	34	31	91	99	227	45.4
Extrapolation to 9000 accounts	-56	18	14	86	96	158	31.6
Extrapolation to 10500 accounts	-84	2	-3	81	93	89	17.8
Extrapolation to 12000 accounts	-113	-14	-19	77	90	21	4.2
Extrapolation to 13500 accounts	-141	-30	-36	72	87	-48	-9.6

As you can see from the chart above our technicians have available hours (based on the average) for approximately 12,000 accounts or 6,000 accounts per technician for our current two technicians. This would lead you to conclude that we could double the number of accounts from 3,000 to 6,000 per technician in our cost model and recalculate the rates based on these new numbers. However, that would not allow us to staff for fluctuations in trouble calls. The extrapolation to 9,000 accounts would be a more realistic view which would set the number of accounts per technician to 4,500.

Implementation Plan:

Entering the new figure of 4,500 accounts per technician into our calculations instead of the original 3,000 accounts per technician will allow us to recalculate the rates. We are effectively reducing the labor rate by one third. The two tables below reflect the changes in the rates. The first table (Initial Cost Rollup) shows the rates as initially determined for the Exchange Service at 3,000 accounts per technician. As you can see 4,500 accounts shows a rate of $9.18 which is how we derived the $10.00 per user per account rate we currently use. 4,500 accounts is the number of accounts we expected to have based on the customers we serviced. As the service grows, we will provide more accounts which could allow for another rate reduction.

The second table (New Cost Rollup) shows the rate after changing the number of accounts supported per technician to 4,500. The total 5 year cost per mailbox per month goes from $9.18 to $8.08. That's a $1.10 cost reduction.

Initial Cost Rollup

Seat Count	Software	Hardware	Support	Labor (Fully Burdened)	Services	Total 5-year cost (per mailbox, per month)
1,500	$3.27	$3.24	$0.64	$3.28	$0.00	$10.44
3,000	$3.17	$2.01	$0.36	$3.28	$0.00	$8.83
4,500	$3.21	$2.42	$0.27	$3.28	$0.00	$9.18
6,000	$3.17	$2.01	$0.22	$3.28	$0.00	$8.69
7,500	$3.15	$1.77	$0.19	$3.28	$0.00	$8.40
9,000	$3.17	$2.01	$0.18	$3.28	$0.00	$8.64
10,500	$3.16	$1.84	$0.16	$3.28	$0.00	$8.44

New Cost Rollup

Seat Count	Software	Hardware	Support	Labor (Fully Burdened)	Services	Total 5-year cost (per mailbox, per month)
1,500	$3.27	$3.24	$0.64	$2.23	$0.00	$9.39
3,000	$3.17	$2.01	$0.36	$2.20	$0.00	$7.74
4,500	$3.21	$2.42	$0.27	$2.19	$0.00	$8.08
6,000	$3.17	$2.01	$0.22	$2.20	$0.00	$7.61
7,500	$3.15	$1.77	$0.19	$2.19	$0.00	$7.30
9,000	$3.17	$2.01	$0.18	$2.19	$0.00	$7.55
10,500	$3.16	$1.84	$0.16	$2.20	$0.00	$7.35

We will have to continue to evaluate the data to make sure that November and December were not special situations that caused the data to skew. However, based on the data, and because we took a conservative average, the data should be viable. Over the next 12 months we will add data via the same methods and validate these findings.

Summary and Recommendations:

Based on the data collected and presented herein, we have demonstrated the number of accounts supported by each technician can be raised from 3,000 accounts per technician to 4,500 accounts per technician. By changing the number of accounts per technician, we will not need to add an additional technician at 6,000 accounts and can delay until 9,000 accounts. As you can see from the chart at the right this is a tremendous labor savings, especially considering the scale on a Statewide implementation. We have shown that reducing the rate still allows us to recover costs adequately and we should be able to reduce the price of the service $1.10 per account.

It is my recommendation we reduce the price of an account by $1.00. This would be a 10% reduction in the cost of the Enterprise Hosted Exchange Service to our customers.

Tech / Account Table

Number of accounts		Number of Technicians	
from	to	3000 Accts	4500 accts
0	1500	1	1
1500	3000	1	1
3000	4500	2	1
4500	6000	2	2
6000	7500	3	2
7500	9000	3	2
9000	10500	4	3
10500	12000	4	3
12000	13500	5	3
13500	15000	5	4
15000	16500	6	4
16500	18000	6	4
18000	19500	7	5
19500	21000	7	5
21000	22500	8	5
22500	24000	8	6
24000	25500	9	6
25500	27000	9	6
27000	28500	10	7
28500	30000	10	7
30000	31500	11	7
31500	33000	11	8
33000	34500	12	8
34500	36000	12	8
36000	37500	13	9
37500	39000	13	9
39000	40500	14	9
40500	42000	14	10
42000	43500	15	10
43500	45000	15	10

Again this will save our customers as listed below in table 3

Table 3

Customer	Number of Accounts	$10 rate	$9 Rate	Annual Difference
Large State Agency	4500	$540,000.00	$486,000.00	$54,000.00
Large County Government	1200	$144,000.00	$129,600.00	$14,400.00
Medium State Agency A	350	$42,000.00	$37,800.00	$4,200.00
Small State Agency A	20	$2,400.00	$2,160.00	$240.00

Definitions

Seat Count – the number of email accounts included in the Enterprise Centralized Hosted Exchange service. This includes user accounts and service accounts (section accounts, application accounts, etc.)

Software – software required to provide the service. This includes server Operating System, Exchange client, Anti-Virus, Anti-Spam, ISA server, and all appliance software comprising the system.

Hardware – hardware required to provide the service. This includes clustered (redundant, highly available) back end Exchange Database servers, load balanced front end OWA servers, redundant Anti-spam/Anti-virus appliances, an ISA server array (Microsoft Security system) and multipath connectivity to these systems. Hardware requirements increase as user count increases.

Support – cost for support services from Microsoft.

Labor – the fully burdened cost for CIO technicians to provide services.

Services – the cost for contractors to implement the environment. The CIO had adequate knowledge and experience to implement this service in house and therefore did not require the $20,000 to $50,000 in implementation services.

Total 5 Year Cost (per mailbox, per month) – total costs for all categories.

State Data Center Benefits

Physical Aspect Benefits

Power

- All power within and entering the Data Center is Redundant. There are redundant feeds to and from the UPS, redundant feeds to each Power Distribution Unit (PDU), redundant power to each Server Rack, and redundant power to each server. Power is monitored 24 x 7.

Generator

- The Data Center maintains a Caterpillar 12 cylinder generator. It has a fuel capacity of 15000 gallons of Diesel and continuously run on a long term basis.

Uninterruptible power

- The Data Center has 2 Liebert Enterprise class Uninterruptible Power Supplies (UPS) in a redundant configuration. These devices have the capability of maintaining all Data Center devices in the computer room on power until the generator takes over.

Climate Control

- The Data Center has 2 170 ton chillers configured with failover. These devices connect to 11 Computer Room Units (CRUs). The CRUs maintain climate control, both humidity and temperature, within the Data Center. The CRUs are also setup in a redundant configuration. Climate Control is monitored 24 x 7.

Fire Suppression System

- The Data Center uses a Dry Fire Suppression System. In the event of a fire, sensors are located above and below floor in the computer room. If a single detection occurs notifications are sent to multiple recipients. If multiple detections occur, the system will take appropriate measures. This system is monitored by multiple sections on a 24 x 7 basis.

Security

- The Data Center has multiple levels of physical security.
    - The Data Center provides 24 hour security by staffing a Bureau of Protective Services armed officer within the facility.
    - Computer Room access is restricted to a list of authorized personnel.
    - All ingress and egress points to the Data Center and authorized areas are controlled by a Card Access system.
    - Cameras are located in strategic positions both internal and external to the Data Center.

Network

- The Data Center utilizes Enterprise Class Layer 2 Network Devices for connectivity. Servers have redundant high speed paths to virtually every segment within the computer room. This allows Storage, Backups, and If the servers were all located at DSS

Firewall

- The Data Center maintains many firewalls for network security. There are multiple Demilitarized Zones (DMZ) to segregate different types of data traffic. Only necessary services reside in the DMZ. All CIO Data Center servers are behind single or multiple firewalls.

Human Aspect Benefits

Personnel

- The Data Center maintains enterprise level, highly skilled, dedicated teams that work cohesively to provide services to our customers. These operational groups interact with each other and customers on a daily basis to provide excellent customer service. These teams are on call 24 x7. Some of the operational teams and their functions are listed below.
    - Mainframe Team
        - The Mainframe operational sections support the mainframe infrastructure, databases, applications, and printing systems for 11 consolidated agencies and multiple statewide applications.
    - Microsoft Server Team
        - The Microsoft operational sections support the Microsoft servers and enterprise storage infrastructure, Antivirus, Anti-Spam, MS SQL databases, enterprise applications, Antivirus, SCEIS (SAP), document management and imaging systems, and Storage Area Network (SAN) arrays as well as File, Print, Email.
    - Unix Linux Server Teams
        - The UNIX / Linux operational sections support the UNIX and Linux based servers, Oracle, DB2, WebShpere, and Mainframe Adabas databases, enterprise applications, and enterprise backups.
    - Desktop Team
        - The Desktop operational sections support the infrastructure customers utilizing the Data Centers file, print, email, antivirus and anti-spam services as well as desktop support.
    - Network Team
        - The Network operational sections support the connectivity for most state agencies access to each other and the Internet. This connectivity includes voice and data communications. They maintain multiple redundant routes to the Internet and the MetroNet with enterprise class switches and routers.
    - Security Team
        - The Security operational sections support the firewalls and intrusion detection and prevention systems.

Service Center (Help Desk)

- The Data Center maintains a Service Center to assist customers with problems, needs, or questions. The Service Center provides the following services to the Data Center and its customers.
    - 24 hour monitoring
    - Single point of contact
    - Problem Tracking System

Electronic Aspect Benefits

- The Data Center maintains many electronic aspects that are benefits for services hosted in the Data Center. Listed below are a few of these benefits.
    - Virus Protection
        - Email - All email is scanned for viruses by McAfee's WebShield virus scanning appliance prior to entering the email system
        - Servers – All files are scanned for viruses by McAfee's NetShield prior to being written to any server
        - Workstations – All files are scanned by McAfee's VirusScan prior to being read or written to workstation
    - Servers
        - Maintained with up to date patches, fixes and service packs to maintain reliability, efficiency, and security.
        - Replaced as necessary
        - Maintenance contracts for hardware and Operating System software.
    - Storage Area Network
        - File and Print services located at Data Center reside on SAN
        - File and Print servers have redundant connectivity to SAN
    - Enterprise Backups
        - Enterprise Tivoli Software
        - Enterprise level fiber attached tape library
        - Run nightly
        - Stored at offsite location

Product/Service Details

Product Title:

Microsoft Exchange Messaging and Collaboration

Service Category:

Electronic Mail, Shared Calendaring, Tasks and Contacts

Summary Description:

Microsoft Exchange Messaging and Collaboration is being offered as a messaging, collaboration, shared calendaring and task management environment. These capabilities will be available through rich client via Microsoft Outlook or the Web.

Rates:

The table below represents the estimated cost per user.

DESCRIPTION	ONE-TIME COSTS PER USER	MONTHLY COSTS PER USER
Email via Outlook Client and Outlook Web Access	Negotiated	$10.00

Monthly Cost Per Account:

- Microsoft's Exchange Client Access Licensing (Exchange CAL)
- Outlook client software for the desktop
- Antivirus hardware
- Anti-spam hardware
- All backend hardware, software, maintenance and management

General Description:

Email via Outlook Client and/or Outlook Web Access

The CIO offers Exchange email capabilities via the Outlook Client. This client will allow you to check your email from internal networks behind state firewalls. This client will be evaluated for current revision levels on an annual basis.

The CIO offers Exchange email capabilities via Outlook Web Access for web based connectivity. This connection will allow you to check your mail from any computer connected to the internet utilizing a Web browser (Internet Explorer 5.5 or higher for the premium client or Netscape and earlier versions of Internet Explorer for the basic client). There is no requirement for any work to be performed at the user workstation (assuming a Web browser has already been installed).

The Customer is responsible for maintaining a current Microsoft Windows Client Access License (Windows CAL)

Features

The following features are included in the listed rate

- Web and/or Client based access
  - Outlook (client based) and Outlook Web Access (Web based) access will be provided
- Technical assistance with setting up client push to workstations
  - CIO will assist organizations IT staff with setting up client pushes to workstations
- 100 Megabytes of email disk space
  - Each email account will have 100 Megabytes of disk space
- Email antivirus scanning
  - All emails entering the system will be scanned for virus/malware (executable extensions will be disallowed)
- Email anti-spam scanning
  - All incoming email will be scanned for spam content
- Training sessions (up to 4)
  - CIO will provide up to 4 training sessions
  - Organizations will be responsible for supplying a training facility
    - Training sessions can be
      - Train the Trainer sessions
      - Auditorium based sessions
      - Classroom based sessions
      - Personal sessions
- Email infrastructure
  - Client Access Licenses
  - Knowledgeable Technicians to support the email infrastructure
  - CIO will provide and maintain the necessary server infrastructure including:
    - Server Hardware
    - Server Software
    - Server Licensing
    - SAN Storage Space
- Data Retention
  - Messages available until user deletion
  - System backups will be completed nightly
  - System backups will be retained for 30 days
- Disaster Recovery for Servers
  - CIO will provide Disaster Recovery on email infrastructure
- CIO Help Desk
  - CIO will provide a 24 hour help desk for problem notification
  - Problem Response Time
    - Individual email issues will be 72 hours
    - Agency wide email issues will be resolved in 24
    - System wide email outages will be resolved in 4 hours

Contact Information:
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